

ELEVATION

TYPE 3

NOTES

GENERAL

For additional details, see Std. Const. Dwgs. GR-1.1, GR-1.2 and other Standard Drawings pertaining to design of specific guardrail types.

APPLICATION

The Type 3 Bridge Terminal Assembly shall be used to connect guardrail runs to both the approach and trailing ends of thrie-beam bridge railings.

POSTS

GENERAL- Posts may be set in drilled holes or driven to grade.

WOOD POSTS shall be square-sawed pressure treated wood as per 710.14 and fabricated with square ends. Bolt holes shall be bored and tops of posts trimmed, if required, after posts are set.

STEEL POSTS and blockouts for Type 3 Bridge Terminal Assemblies may be furnished as an alternate. The steel alternates for the wood posts are listed below.

WOOD	10"X10"	8"X8"	6"X8"
STEEL	W8X24	W6X25	W6X9

PAYMENT

Payment for Item 606 - Each Bridge Terminal Assembly, Type 3, shall include the extra cost, in excess of normal guardrail cost, for additional and different type posts, nested thrie beam sections, thrie-beam transition section, and other hardware.

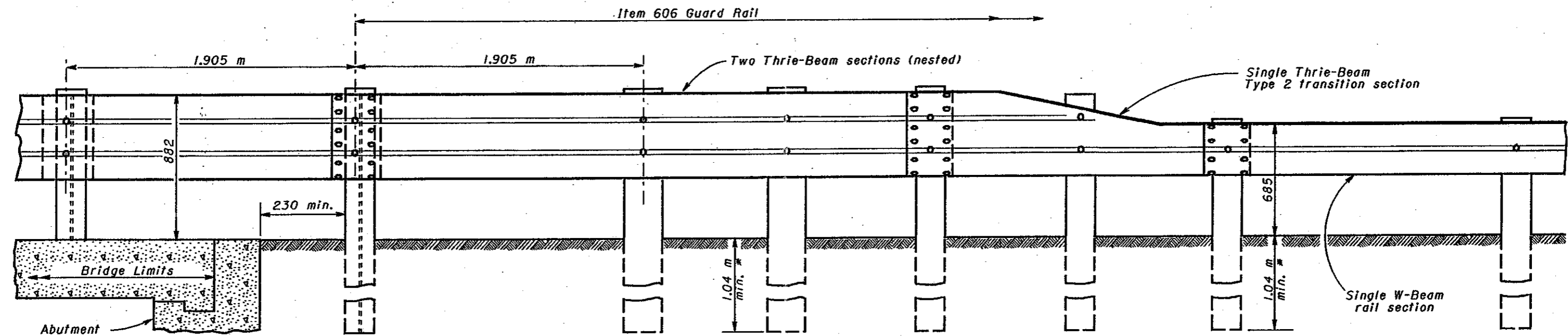
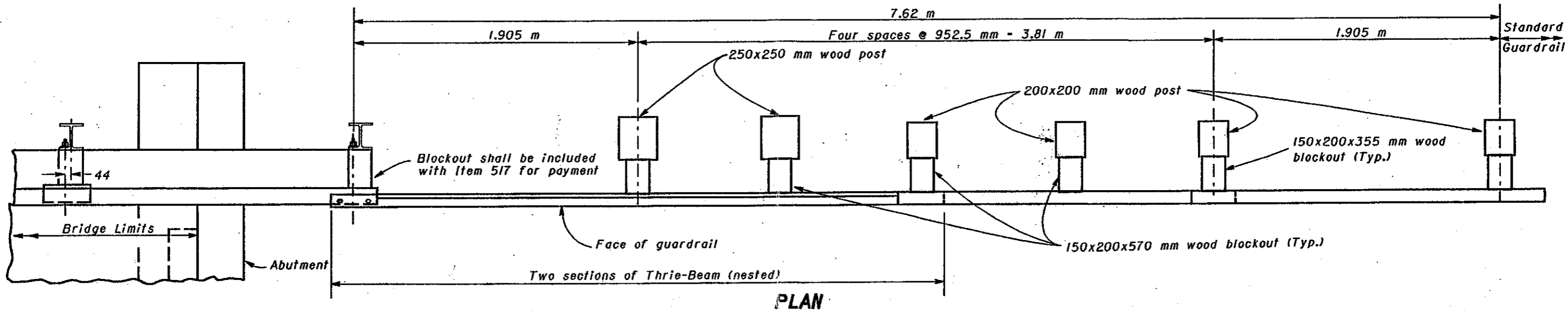
BUREAU OF LOCATION AND DESIGN
OHIO DEPARTMENT OF TRANSPORTATION

BRIDGE TERMINAL ASSEMBLY, TYPE 3

DATE
5-6-91

STANDARD CONSTRUCTION DRAWING
GR-3.3

APPROVED *D.K. Hulman* ENGR., L. & D.



* See Std. Constr. Dwg. GR-1.2M for additional post embedment details.

All dimensions are in millimeters unless otherwise noted.

TYPE 3

NOTES

GENERAL:
For additional details, see Std. Constr. Dwgs. GR-1.1M, GR-1.2M and other Drawings pertaining to specific guardrail types.

APPLICATION:
The Type 3 Bridge Terminal Assembly shall be used to connect guardrail runs to both the approach and trailing ends of Thrie-Beam bridge railings.

POSTS:
GENERAL - Posts may be set in drilled holes or driven to grade.

WOOD POSTS - shall be square-sawed pressure treated wood as per CMS 710.14 and fabricated with square ends. Bolt holes shall be bored and tops of posts trimmed, if required, after posts are set.

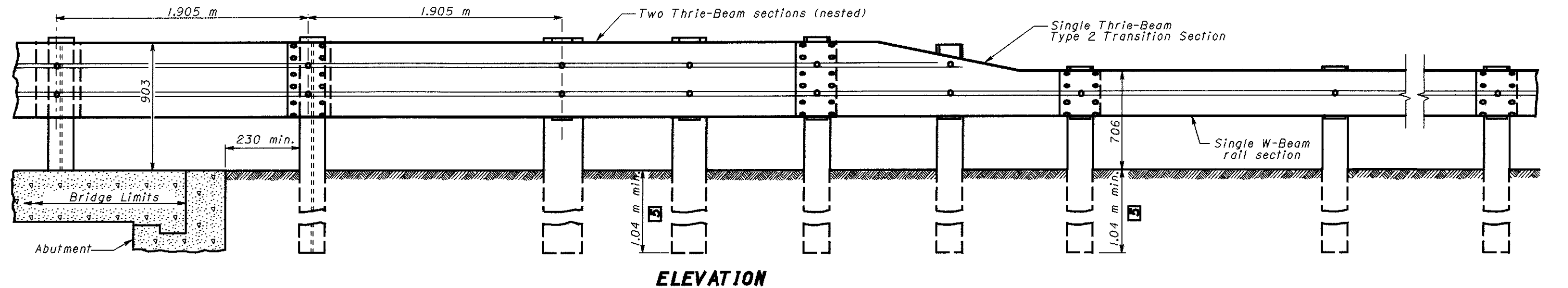
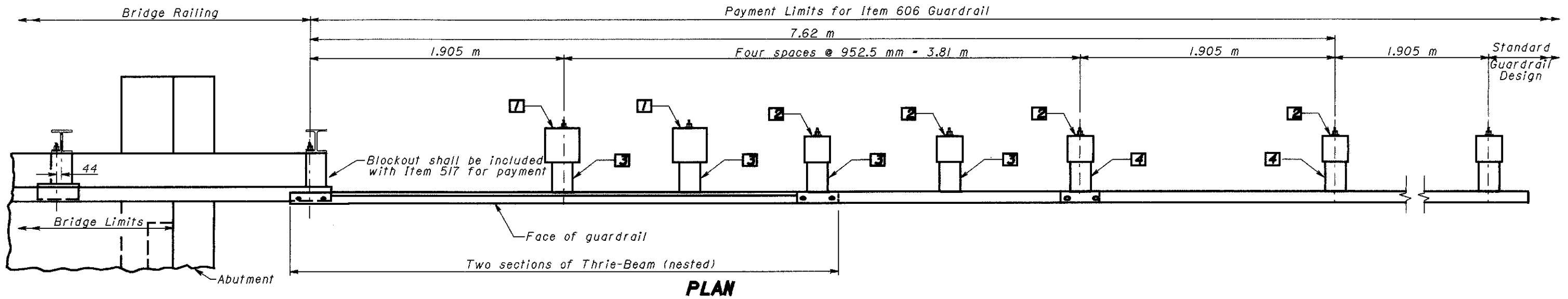
STEEL POSTS - and blockouts for Type 3 Bridge Terminal Assemblies may be furnished as an alternate. The steel alternates for the wood posts are listed below.

WOOD	250x250 mm	200x200 mm	150x200 mm
STEEL	W200x35.9	W150x37.1	W150x13.5

PAYMENT:
Payment for Item 606 - Each, Bridge Terminal Assembly, Type 3, shall include the extra cost, in excess of normal guardrail cost, for additional and different type posts, nested Thrie-Beam sections, Thrie-Beam transition section, and other hardware.



BUREAU OF LOCATION AND DESIGN OHIO DEPARTMENT OF TRANSPORTATION	
BRIDGE TERMINAL ASSEMBLY, TYPE 3	DATE 11-30-94
STANDARD CONSTRUCTION DRAWING GR-3.3M	
APPROVED <i>W. K. Anderson</i>	ENGR., L & D



All dimensions are in millimeters unless otherwise noted.

NOTES

LEGEND

- 1 250 x 250 mm wood post
- 2 200 x 200 mm wood post
- 3 150 x 200 x 570 mm wood blockout (See ALTERNATE POSTS AND BLOCKOUTS note)
- 4 150 x 200 x 355 mm wood blockout (See ALTERNATE POSTS AND BLOCKOUTS note)
- 5 See SCD GR-1.2M for additional post embedment details.

GENERAL:

For additional details, see SCD's. GR-1.1M, GR-1.2M and other Drawings pertaining to specific guardrail types.

APPLICATION:

The Type 3 Bridge Terminal Assembly shall be used to connect guardrail runs to both the approach and trailing ends of Thrie-Beam bridge railings.

POSTS:

GENERAL - Posts may be set in drilled holes or driven to grade.

WOOD POSTS - shall be square-sawed pressure treated wood as per CMS 710.14 and fabricated with square ends. Bolt holes shall be bored and tops of posts trimmed, if required, after posts are set.

ALTERNATE POSTS AND BLOCKOUTS for Type 3 Bridge Terminal Assemblies may be furnished according to the following chart. Plastic blockouts shall not be permitted for Type 3 Bridge Terminal Assemblies.

Wood Posts & Blockouts	250x250 mm	200x200 mm
Steel Posts	W200x35.9	W150x37.1
Wood Blockouts	150x200 mm	
Steel Blockouts	W150x13.5	

PAYMENT:

Payment for Item 606 - Each, Bridge Terminal Assembly, Type 3, shall include the extra cost, in excess of normal guardrail costs, for additional and different type posts and blockouts, nested Thrie-Beam sections, Thrie-Beam transition section, and other hardware.



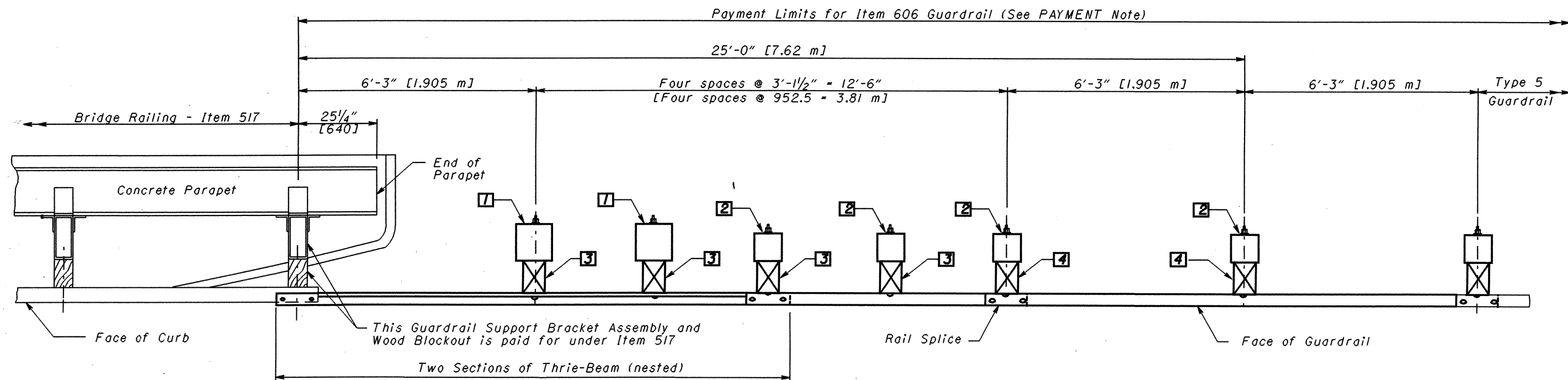
OHIO DEPARTMENT OF TRANSPORTATION

BRIDGE TERMINAL ASSEMBLY, TYPE 3

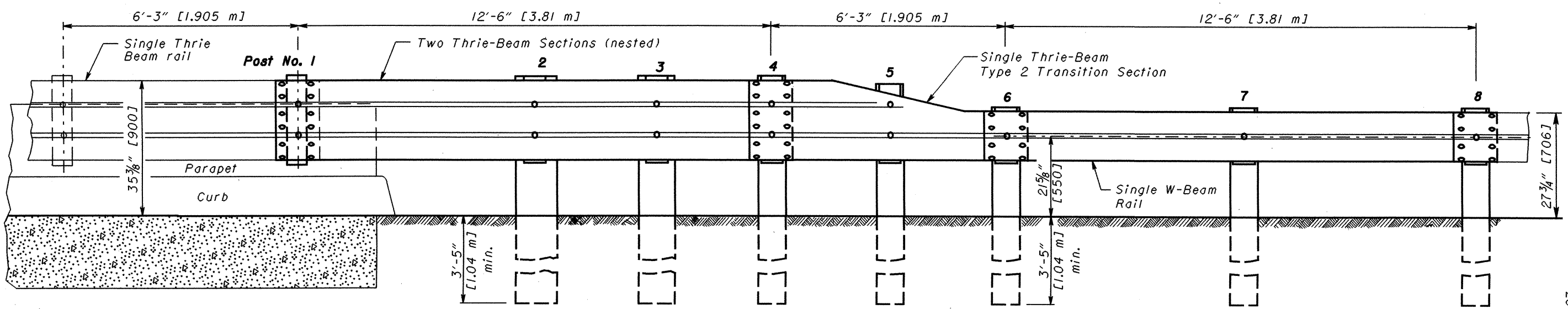
DATE
11-30-94
10-21-97

STANDARD CONSTRUCTION DRAWING GR-3.3M

APPROVED *Ray F. Schindler*



PLAN



ELEVATION

NOTES

GENERAL: For additional rail and post details, see SCD GR-1.1.

APPLICATION: Use Type 3 Bridge Terminal Assembly to connect guardrail runs to both the approach and trailing ends of Thrie-Beam Bridge Railings (see Structural Engineering's SCD TBR-91). Do not use on the NHS.

POSTS: Posts may be set in drilled holes or driven to grade. See SCD GR-1.1 for additional Post embedment details.

WOOD POSTS - Use square sawed pressure treated wood as specified in CMS 710.14 and fabricate with square ends. Bore bolt holes and trim the tops of posts, if required, after the posts are set.

STEEL POSTS - are allowed as an alternate. Use W8x24 [W200x35.9] for 10"x10" [250x250] wood posts and use W6x25 [W150x37.1] for 8"x8" [200x200] posts. Use same post material throughout assembly.

BLOCKOUTS: Use wood blockouts only. Steel or plastic blockouts are not permitted.

FLARED GUARDRAIL: Start Standard Guardrail Flares as shown on SCD GR-5.1 at or beyond Post No. 8; however, the flare may begin at Post No. 6.

PAYMENT: Item 606 - Bridge Terminal Assembly, Type 3, Each, includes the cost of extra components, in excess of normal guardrail, for additional and different types of posts and and blockouts, nested Thrie-Beam, transition and connector sections, and other hardware.

LEGEND

- 1 10"x10" [250x250] Wood Post (See STEEL POSTS Note)
- 2 8"x8" [200x200] Wood Post (See STEEL POSTS Note)
- 3 6"x8"x22 1/2" [150x200x570] Wood Blockout (See BLOCKOUTS Note)
- 4 6"x8"x14" [150x200x350] Wood Blockout (See BLOCKOUTS Note)

THIS DRAWING REPLACES GR-3.3M DATED 10-21-97.

NUMBER	BRIDGE TERMINAL ASSEMBLY, TYPE 3	STDS. ENGR.	D. Focke	DATE	4-18-03
GR-3.3	ROADWAY ENGINEERING SERVICES	OHIO DEPARTMENT OF TRANSPORTATION	ROADWAY DESIGN ENGINEER	Paul T. Sutherland	

Item 606 Guardrail Type 5 and Item 606 Bridge Terminal Assembly, Type 3 (See PAYMENT Note)

25'-0" [7.62 m]

6'-3" [1.905 m]

Four spaces @ 3'-1 1/2" = 12'-6"
[Four spaces @ 952.5 = 3.81 m]

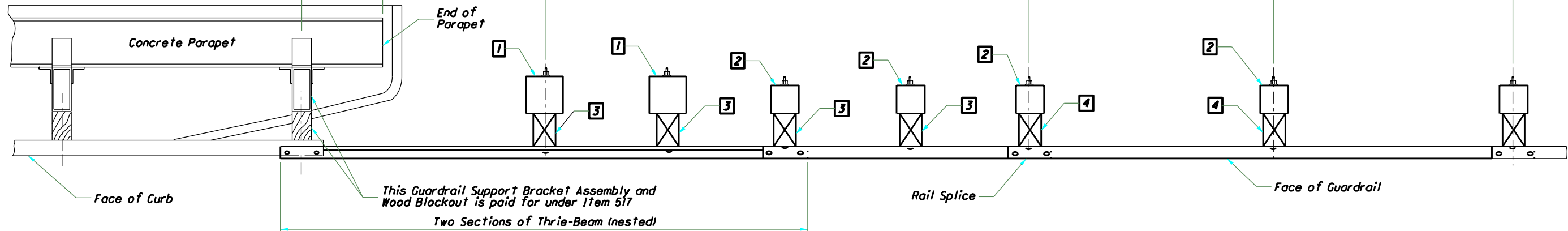
6'-3" [1.905 m]

6'-3" [1.905 m]

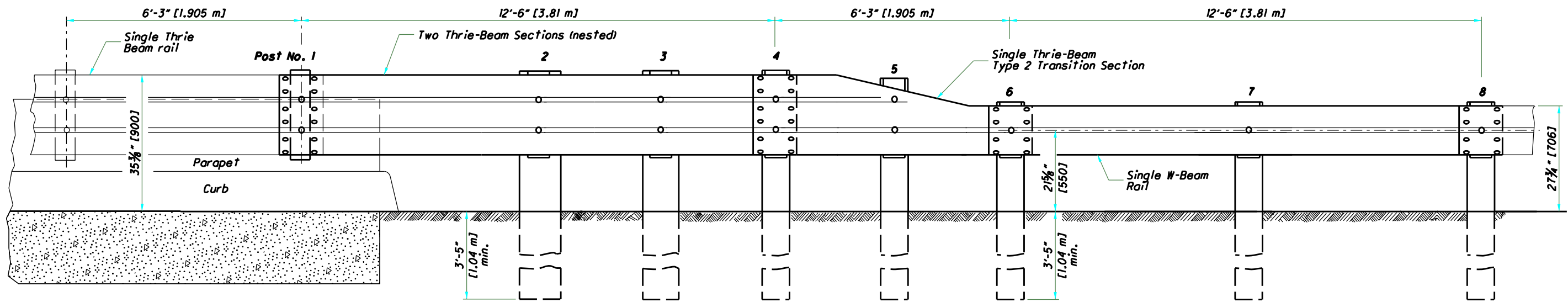
Type 5 Guardrail
or Anchor Assembly

Bridge Railing - Item 517

25/4" [640]



PLAN



ELEVATION

NOTES

GENERAL: For additional rail and post details, see SCD GR-1.1.

APPLICATION: Use Type 3 Bridge Terminal Assembly to connect guardrail runs for both the approach and trailing ends of Thrie-Beam Bridge Railings (see Structural Engineering's SCD TBR-91). Do not use on the NHS.

POSTS: Posts may be set in drilled holes or driven to grade. See SCD GR-1.1 for additional Post embedment details.

WOOD POSTS - Use square sawed pressure treated wood as specified in CMS 710.14 and fabricate with square ends. Bore bolt holes and trim the tops of posts, if required, after the posts are set.

STEEL POSTS - are allowed as an alternate. Use W8x24 [W200x35.9] for 10"x10" [250x250] wood posts and use W6x25 [W150x37.1] for 8"x8" [200x200] posts. Use same post material throughout assembly.

BLOCKOUTS: Use wood blockouts only, steel or plastic blockouts are not permitted. Use notched blockouts with steel posts.

FLARED GUARDRAIL: Start Standard Guardrail Flares as shown on SCD GR-5.1 at or beyond Post No. 8; however, the flare may begin at Post No. 6.

PAYMENT: Item 606 - Bridge Terminal Assembly, Type 3, Each includes the cost of extra components, in excess of normal guardrail, for additional and different types of posts and blockouts, nested Thrie-Beam, transition and connector sections, and other hardware.

LEGEND

- 1 10"x10" [250x250] Wood Post (See STEEL POSTS Note)
- 2 8"x8" [200x200] Wood Post (See STEEL POSTS Note)
- 3 6"x8"x22 1/2" [150x200x570] Wood Blockout (See BLOCKOUTS Note)
- 4 6"x8"x14" [150x200x350] Wood Blockout (See BLOCKOUTS Note)

THIS DRAWING REPLACES GR-3.3 DATED 4-18-03.

SCD NUMBER
GR-3.3

STANDARD ROADWAY CONSTRUCTION DRAWING
BRIDGE TERMINAL ASSEMBLY, TYPE 3

OFFICE OF
ROADWAY
ENGINEERING

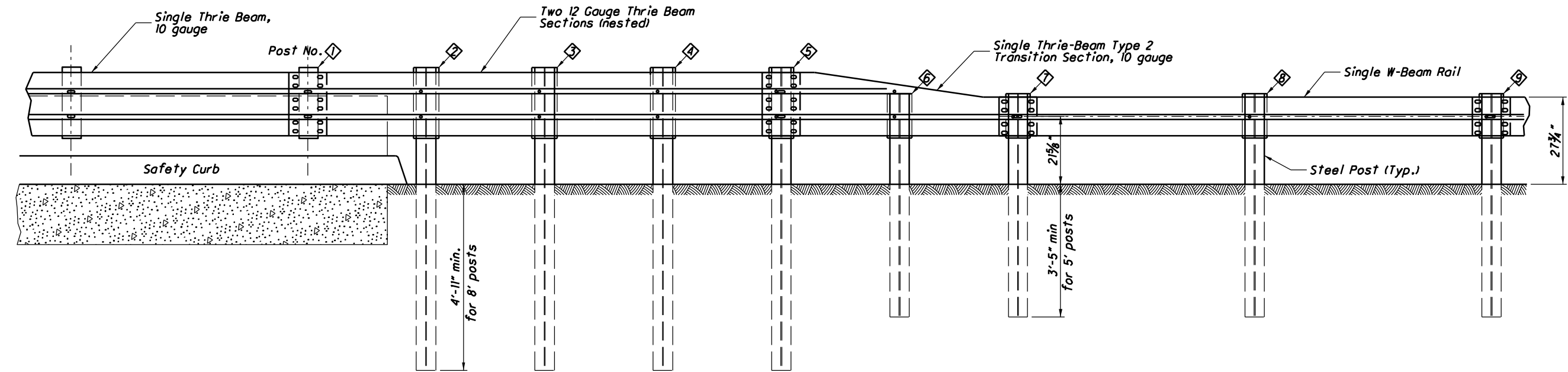
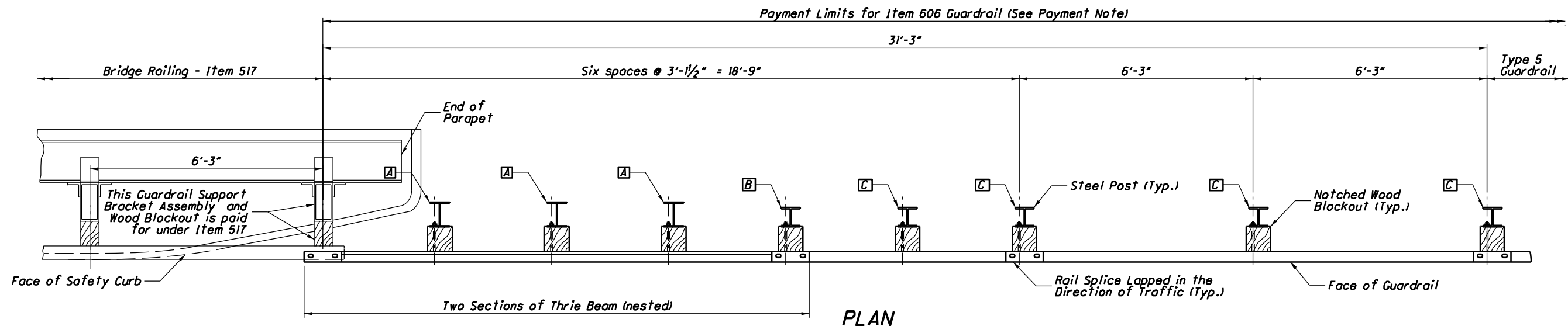
ALL METRIC DIMENSIONS
(IN BRACKETS []) ARE
IN MILLIMETERS UNLESS
OTHERWISE NOTED.

STATE ENGINEER
M. Blaine

STATE OF OHIO DEPARTMENT OF TRANSPORTATION
ADMINISTRATOR

10-16-09
DATE

David B. Brown



NOTES

GENERAL: For additional rail and post details, see **SCD GR-1.1**.

APPLICATION: Use Type 3 Bridge Terminal Assembly to connect guardrail runs for both the approach and trailing ends of Thrie Beam Bridge Railings. The design detailed on this sheet is approved to NCHRP 350 Test Level 3. See **Structural Engineering's SCD TBR-1-II** for the associated Bridge Railing.

THRIE BEAM TRANSITION: The asymmetrical W-Beam to Thrie Beam transition panel shall be 10 gauge.

FLARED GUARDRAIL: Start Standard Guardrail Flares as shown on **SCD GR-5.1** at or beyond Post No. 9; However, where sight constraints exist, the flare may begin at Post No. 7.

POSTS: Use steel posts only. Wood posts are not permitted in this design. Posts may be set in drilled holes or driven to grade. After placing posts in drilled holes, backfill and tamp disturbed soil. See **SCD GR-1.1** for additional post embedment details.

BLOCKOUTS: Steel posts in this design require the use of notched wood blockouts similar to those shown on **SCD GR-2.1**. The Blockout's notch shall be sized to accept the post's flange. Steel or plastic blockouts are not permitted.

PAYMENT: ITEM 606 - Bridge Terminal Assembly, Type 3, Each, includes the cost of extra components, in excess of normal guardrail, for additional and different types of posts and blockouts, nested Thrie-Beam, transition and connector sections, and other hardware.

LEGEND

- Ⓐ Posts 2, 3, & 4:
W8x24x8'-0" Steel Post with
8"x8"x22 1/2" Notched Wood Blockout
- Ⓑ Post 5:
W6x25x8'-0" Steel Post with
8"x8"x22 1/2" Notched Wood Blockout
- Ⓒ Post 6, 7, 8, & 9:
W6x25x6'-0" Steel Post with
8"x8"x14" Notched Wood Blockout

Payment Limits for Item 606 Guardrail (See Payment Note)

PLAN

ELEVATION

THIS DRAWING REPLACES GR-3.3 DATED 10-16-09.

STANDARD ROADWAY CONSTRUCTION DRAWING

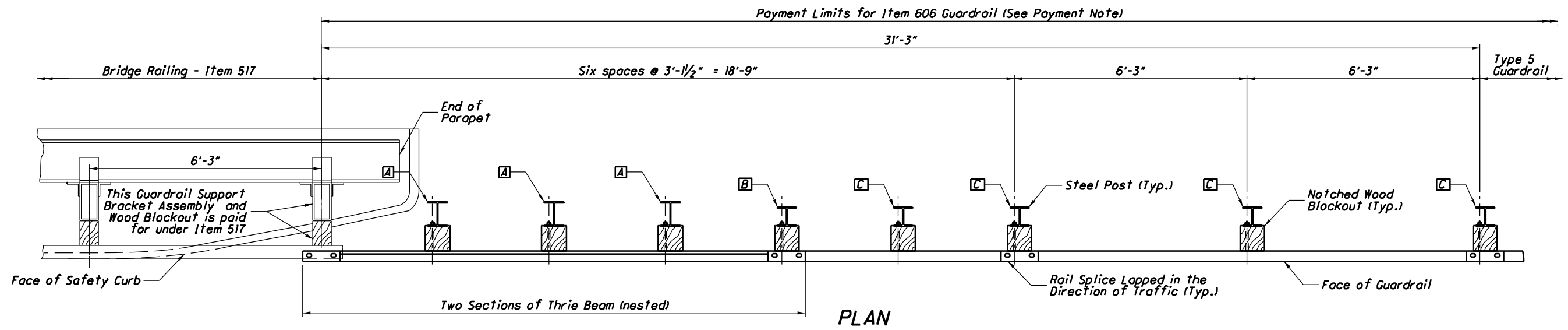
OFFICE OF ROADWAY ENGINEERING
BRIDGE TERMINAL ASSEMBLY, TYPE 3

SCD NUMBER
GR-3.3

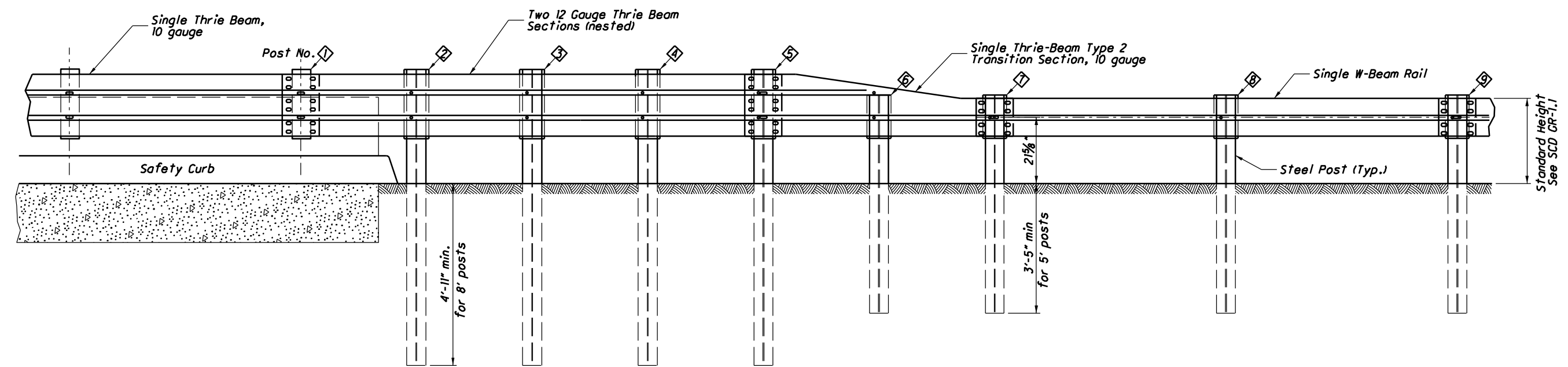
STATE ENGINEER
M. RUPPE

STATE OF OHIO DEPARTMENT OF TRANSPORTATION
Administrator
D. B. Swan

10-21-11
DATE



PLAN



ELEVATION

NOTES

GENERAL: For additional rail and post details, see **SCD GR-1.1**.

APPLICATION: Use Type 3 Bridge Terminal Assembly to connect guardrail runs for both the approach and trailing ends of Thrie Beam Bridge Railings. The design detailed on this sheet is approved to NCHRP 350 Test Level 3. See **Structural Engineering's SCD TBR-1-II** for the associated Bridge Railing.

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PAYMENT: ITEM 606 - Bridge Terminal Assembly, Type 3, Each, includes the cost of extra components, in excess of normal guardrail, for additional and different types of posts and blockouts, nested Thrie-Beam, transition and connector sections, and other hardware.

LEGEND

- Ⓐ Posts 2, 3, & 4:
W8x24x8'-0" Steel Post with
8"x8"x22 1/2" Notched Wood Blockout
- Ⓑ Post 5:
W6x25x8'-0" Steel Post with
8"x8"x22 1/2" Notched Wood Blockout
- Ⓒ Post 6, 7, 8, & 9:
W6x25x6'-0" Steel Post with
8"x8"x14" Notched Wood Blockout

THIS DRAWING REPLACES GR-3.3 DATED 10-21-11.

SCD NUMBER GR-3.3	OFFICE OF ROADWAY ENGINEERING	STANDARD ROADWAY CONSTRUCTION DRAWING	STATE OF OHIO DEPARTMENT OF TRANSPORTATION <i>Michael Blune</i> ADMINISTRATOR
1 / 1	BRIDGE TERMINAL ASSEMBLY, TYPE 3	M. Ruppel ENGINEER	DATE 7-20-12